

SANITARY SEWER NOTES

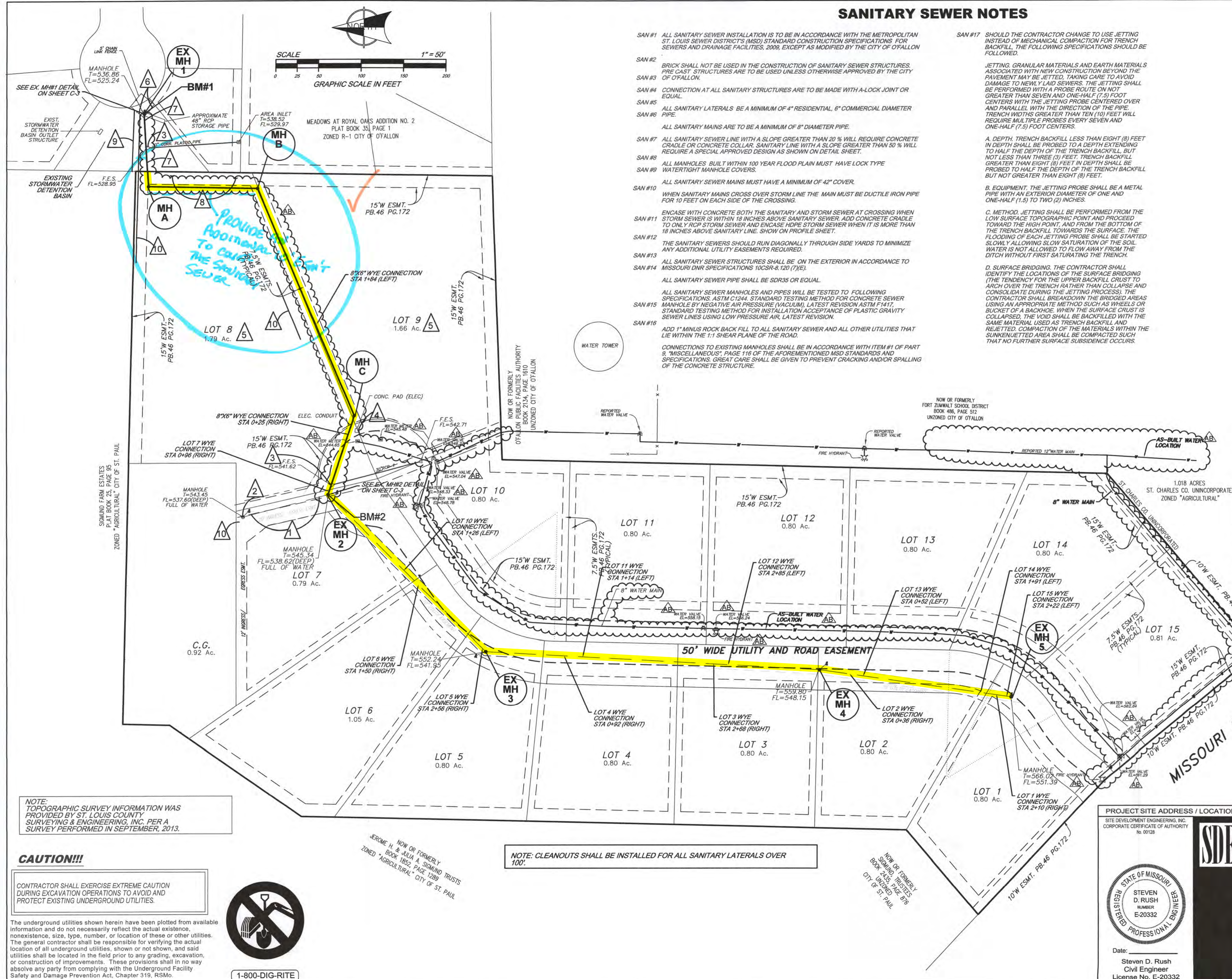
- SAN #1 ALL SANITARY SEWER INSTALLATION IS TO BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT'S (MSD) STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009, EXCEPT AS MODIFIED BY THE CITY OF OFALLON.
- SAN #2 BRICK SHALL NOT BE USED IN THE CONSTRUCTION OF SANITARY SEWER STRUCTURES. PRE CAST STRUCTURES ARE TO BE USED UNLESS OTHERWISE APPROVED BY THE CITY OF OFALLON.
- SAN #3 CONNECTION AT ALL SANITARY STRUCTURES ARE TO BE MADE WITH A-LOCK JOINT OR EQUAL.
- SAN #4 ALL SANITARY MAINS ARE TO BE MADE WITH A-LOCK JOINT OR EQUAL.
- SAN #5 ALL SANITARY MAINS BE A MINIMUM OF 4" RESIDENTIAL, 6" COMMERCIAL DIAMETER PIPE.
- SAN #6 ALL SANITARY MAINS ARE TO BE A MINIMUM OF 8" DIAMETER PIPE.
- SAN #7 ALL SANITARY SEWER LINE WITH A SLOPE GREATER THAN 20% WILL REQUIRE CONCRETE CRADLE OR CONCRETE COLLAR. SANITARY LINE WITH A SLOPE GREATER THAN 50% WILL REQUIRE A SPECIAL APPROVED DESIGN AS SHOWN ON DETAIL SHEET.
- SAN #8 ALL MANHOLES BUILT WITHIN 100 YEAR FLOOD PLAIN MUST HAVE LOCK TYPE WATERTIGHT MANHOLE COVERS.
- SAN #9 ALL SANITARY SEWER MAINS MUST HAVE A MINIMUM OF 42" COVER.
- SAN #10 WHEN SANITARY MAINS CROSS OVER STORM LINE THE MAIN MUST BE DUCTILE IRON PIPE FOR 10 FEET ON EACH SIDE OF THE CROSSING.
- SAN #11 ENCASE WITH CONCRETE BOTH THE SANITARY AND STORM SEWER AT CROSSING WHEN STORM SEWER IS WITHIN 18 INCHES ABOVE SANITARY SEWER. ADD CONCRETE CRADLE TO ONLY RCP STORM SEWER AND ENCASE HOPE STORM SEWER WHEN IT IS MORE THAN 18 INCHES ABOVE SANITARY LINE. SHOW ON PROFILE SHEET.
- SAN #12 THE SANITARY SEWERS SHOULD RUN DIAGONALLY THROUGH SIDE YARDS TO MINIMIZE ANY ADDITIONAL UTILITY EASEMENTS REQUIRED.
- SAN #13 ALL SANITARY SEWER STRUCTURES SHALL BE ON THE EXTERIOR IN ACCORDANCE TO MISSOURI DNR SPECIFICATIONS 10CSR-8.120 (7)(E).
- SAN #14 ALL SANITARY SEWER PIPE SHALL BE SDR35 OR EQUAL.
- SAN #15 ALL SANITARY SEWER MANHOLES AND PIPES WILL BE TESTED TO FOLLOWING SPECIFICATIONS. ASTM C1244. STANDARD TESTING METHOD FOR CONCRETE SEWER MANHOLE BY NEGATIVE AIR PRESSURE (VACUUM), LATEST REVISION ASTM F1417. STANDARD TESTING METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR, LATEST REVISION.
- SAN #16 ADD 1" MINUS ROCK BACK FILL TO ALL SANITARY SEWER AND ALL OTHER UTILITIES THAT LIE WITHIN THE 1:1 SHEAR PLANE OF THE ROAD.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE IN ACCORDANCE WITH ITEM #1 OF PART 9 "MISCELLANEOUS", PAGE 116 OF THE FOREMENTIONED MSD STANDARDS AND SPECIFICATIONS. GREAT CARE SHALL BE GIVEN TO PREVENT CRACKING AND/OR SPALLING OF THE CONCRETE STRUCTURE.

- SAN #17 SHOULD THE CONTRACTOR CHANGE TO USE JETTING INSTEAD OF MECHANICAL COMPACTION FOR TRENCH BACKFILL, THE FOLLOWING SPECIFICATIONS SHOULD BE FOLLOWED.
 - JETTING. GRANULAR MATERIALS AND EARTH MATERIALS ASSOCIATED WITH NEW CONSTRUCTION BEYOND THE PAVEMENT MAY BE JETTED. TAKING CARE TO AVOID DAMAGE TO NEWLY LAID SEWERS. THE JETTING SHALL BE PERFORMED WITH A PROBE ROUTE ON NOT GREATER THAN SEVEN AND ONE-HALF (7.5) FOOT CENTERS WITH THE JETTING PROBE CENTERED OVER AND PARALLEL WITH THE DIRECTION OF THE PIPE. TRENCH WIDTHS GREATER THAN TEN (10) FEET WILL REQUIRE MULTIPLE PROBES EVERY SEVEN AND ONE-HALF (7.5) FOOT CENTERS.
 - A. DEPTH. TRENCH BACKFILL LESS THAN EIGHT (8) FEET IN DEPTH SHALL BE PROBED TO A DEPTH EXTENDING TO HALF THE DEPTH OF THE TRENCH BACKFILL, BUT NOT LESS THAN THREE (3) FEET. TRENCH BACKFILL GREATER THAN EIGHT (8) FEET IN DEPTH SHALL BE PROBED TO HALF THE DEPTH OF THE TRENCH BACKFILL BUT NOT GREATER THAN EIGHT (8) FEET.
 - B. EQUIPMENT. THE JETTING PROBE SHALL BE A METAL PIPE WITH AN EXTERIOR DIAMETER OF ONE AND ONE-HALF (1.5) TO TWO (2) INCHES.
 - C. METHOD. JETTING SHALL BE PERFORMED FROM THE LOW SURFACE TOPOGRAPHIC POINT AND PROCEED TOWARD THE HIGH POINT, AND FROM THE BOTTOM OF THE TRENCH BACKFILL TOWARDS THE SURFACE. THE FLOODING OF EACH JETTING PROBE SHALL BE STARTED SLOWLY ALLOWING SLOW SATURATION OF THE SOIL. WATER IS NOT ALLOWED TO FLOW AWAY FROM THE DITCH WITHOUT FIRST SATURATING THE TRENCH.
 - D. SURFACE BRIDGING. THE CONTRACTOR SHALL IDENTIFY THE LOCATIONS OF THE SURFACE BRIDGING (THE TENDENCY FOR THE UPPER BACKFILL CRUST TO ARCH OVER THE TRENCH RATHER THAN COLLAPSE AND CONSOLIDATE DURING THE JETTING PROCESS). THE CONTRACTOR SHALL BREAKDOWN THE BRIDGED AREAS USING AN APPROPRIATE METHOD SUCH AS WHEELS OR BUCKET OF A BACKHOE. WHEN THE SURFACE CRUST IS COLLAPSED, THE VOID SHALL BE BACKFILLED WITH THE SAME MATERIAL USED AS TRENCH BACKFILL AND REJETTED. COMPACTION OF THE MATERIALS WITHIN THE SUNKEN/JETTED AREA SHALL BE COMPACTED SUCH THAT NO FURTHER SURFACE SUBSIDENCE OCCURS.

GENERAL NOTES

- 1. REMOVE EXISTING 8" SANITARY SEWER. CAP END OF EXISTING LINE AT MANHOLE TO INSURE WATERTIGHT CLOSURE.
- 2. REMOVE EXISTING MANHOLE. FILL-IN EXISTING MANHOLE AS DIRECTED BY THE OWNER.
- 3. CONTRACTOR TO INSURE INTEGRITY OF EXISTING FLARED-END SECTION. IF EXISTING FLARED-END SECTION IS IN THE WAY OF CONSTRUCTION, CONTRACTOR SHALL REMOVE FLARED-END SECTION, BACKFILL ENTIRE TRENCH WITH GRANULAR BACKFILL, THEN REPLACED FLARED-END SECTION.
- 4. CONTRACTOR TO INSURE INTEGRITY OF EXISTING ELECTRIC CONCRETE PAD SO AS TO PREVENT ANY SETTLEMENT OF PAD.
- 5. CONTRACTOR TO COORDINATE THE LOCATION OF THE SANITARY SEWER FOR LOTS 8 AND 9 PRIOR TO ANY CONSTRUCTION.
- 6. CONTRACTOR TO REMOVE EXISTING FENCE FOR CONSTRUCTION, THE REPLACE FENCE TO ITS ORIGINAL CONDITION AND LOCATION.
- 7. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE CITY OF OFALLON'S SEWER & WATER DEPARTMENT TO INQUIRE INTO THE LOCATION OF ANY UNDERGROUND UTILITY OR PIPING WHICH MAY AFFECT THE OPERATION OF THEIR LIFT STATION IN THE VICINITY OF THE PROPOSED CONSTRUCTION.
- 8. CONTRACTOR IS ADVISED OF THE EXISTENCE OF BRUSH AND POSSIBLE TREES ALONG THE PROPOSED SEWER ROUTE, ESPECIALLY BETWEEN EX. MH-1 AND MH B. CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE SITE PRIOR TO SUBMITTING ANY BIS.
- 9. CONTRACTOR SHALL PROVIDE DOUBLE ROW OF SILTATION CONTROL FENCE.
- 10. CONTRACTOR TO PROVIDE SINGLE ROW OF SILTATION CONTROL FENCE.
- 11. ALL SILTATION CONTROL FENCES SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION.

URGENT:
 CONTRACTOR SHALL MAKE EVERY ATTEMPT TO INSTALL AND PROPERLY BACKFILL THE PROPOSED SEWER LINE BETWEEN EX. MH-1 AND MH A. PRIOR TO ANY RAINFALL EVENT. THE PROPOSED SEWER LINE BETWEEN THE TWO STRUCTURES IS LOCATED IN AN EXISTING STORMWATER DETENTION BASIN WHICH COULD FILL UP WITH STORMWATER TO ELEVATION 535 TO 537 OR HIGHER DURING A RAINFALL EVENT. CONTRACTOR IS URGED TO USE EXTREME CAUTION WHEN SCHEDULING THE WORK AND TO COORDINATE CONSTRUCTION INSPECTION SO AS NOT TO DELAY BACKFILLING OF THE TRENCH.
 CONTRACTOR SHALL ALSO INSURE THE SIDE SLOPES OF EXISTING DETENTION BASIN SHALL REMAIN SECURE AND NO ADDITIONAL EROSION OF THE TRENCH WILL OCCUR. CONTRACTOR MAY CONSIDER BRACING AND SHORING, AS OUTLINED ON PAGE 50 OF THE SPECIFIED 2009 MSD STANDARDS AND SPECIFICATIONS.
 IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO INSURE SEDIMENT WILL NOT BE ALLOWED TO DISCHARGE THROUGH THE EXISTING OUTFALL STRUCTURE IN THE STORMWATER DETENTION BASIN.



NOTE: TOPOGRAPHIC SURVEY INFORMATION WAS PROVIDED BY ST. LOUIS COUNTY SURVEYING & ENGINEERING, INC. PER A SURVEY PERFORMED IN SEPTEMBER, 2013.

CAUTION!!!
 CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING EXCAVATION OPERATIONS TO AVOID AND PROTECT EXISTING UNDERGROUND UTILITIES.



The underground utilities shown herein have been plotted from available information and do not necessarily reflect the actual existence, nonexistence, size, type, number, or location of these or other utilities. The general contractor shall be responsible for verifying the actual location of all underground utilities, shown or not shown, and said utilities shall be located in the field prior to any grading, excavation, or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMo.

NOTE: CLEANOUTS SHALL BE INSTALLED FOR ALL SANITARY LATERALS OVER 100'.

AS BUILT
 CITY #15-814-AB

PROJECT SITE ADDRESS / LOCATION: SIGMUND PLACE, CITY OF ST. PAUL, ST. CHARLES COUNTY, MO 63366

SITE DEVELOPMENT ENGINEERING, INC.
 CORPORATE CERTIFICATE OF AUTHORITY
 No. 00128



Date: Steven D. Rush
 Civil Engineer
 License No. E-20332

SDE SITE DEVELOPMENT ENGINEERING, INC.
 PLANNING • CONSULTING • CIVIL ENGINEERING

SIGMUND PLACE		
DATE: Sept. 15, 2013	JOB NO.: 213-021	DRAWN BY: DCT
CHECKED BY: SDR		SCALE: 1" = 50'
Sanitary Sewer Extension Plan		
REV: Oct. 19, 2015 As Built Water & Sewer Lines	SHEET:	C-2